

# AnswerQuest: A System for Generating Question-Answer Items from Multi-Paragraph Documents

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★ We combine **question generation (QG)** and **question answering (QA)** to produce Q&A pairs for any document

Automated reading comprehension is one of the current frontiers in AI and NLP research, evidenced by the frequently changing state-of-the-art among competing approaches on standard benchmark tasks (e.g. Wang et al., 2018). These systems aim to reach the standard of human performance, but they also have the potential to further enhance human reading comprehension. For instance, many demonstrations of reading comprehension involve eliciting answers to questions about a text. Meanwhile, **educational research and conventional writing advice indicate that structuring information in a question-and-answer format can aid comprehension** (Knight, 2010; Raphael, 1982). Accordingly, systems that present content in this format by automatically generating and answering relevant questions may help users better understand the content.

QG



QA



What do educational research and conventional writing advice indicate?

## Question Answering

★ Representing documents with BERT encoding improves QA

	EM	F1
BiDAF Shared-Norm (Clark and Gardner, 2018)	64.08	72.37
BERT Shared-Norm (Our model)	<b>72.85</b>	<b>80.58</b>

QA accuracy on SQuAD-1.1

## Question Generation

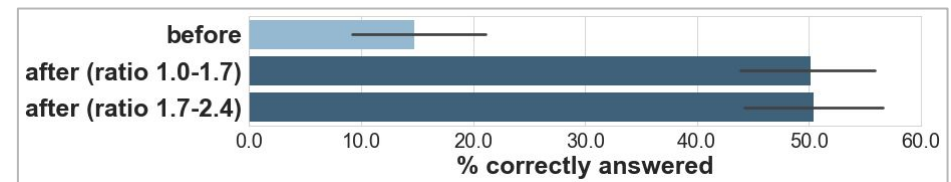
★ Observing questions generated from linguistic rules improves QG

	Rating	Has Ans
Baseline seq2seq	2.813	0.225
Rule-augmented seq2seq	<b>3.140</b>	<b>0.399</b>

Human ratings for QG on SQuAD-1.1

## Generating Q&A Pairs

★ People gained significant knowledge about a document just by reading generated Q&A pairs (without reading the document itself)



Human accuracy on quizzes about documents before and after observing generated Q&A pairs